

What is claimed is:

1. A lubricating oil composition comprising a major amount of at least one of a Group I, Group II Group III mineral oil of lubricating viscosity, or a mixture thereof; a minor amount of one or more high molecular weight polymers comprising olefin copolymers containing at least one moiety selected from alkyl amine, alkyl amide, aryl amine or aryl amide groups, nitrogen-containing heterocyclic groups or ester linkages; and a minor amount of dispersant comprising one or more nitrogen-containing dispersants that are the reaction product of a polyalkenyl-substituted mono- or dicarboxylic acid, anhydride or ester and a polyamine; at least one of the nitrogen-containing dispersants having a polyalkenyl moiety with a number average molecular weight of at least about 1800, and from about 1.3 to 1.7 mono- or dicarboxylic acid producing moieties per polyalkenyl moiety; dispersant contributing at least about 0.08 wt. % of nitrogen to the lubricating oil composition.
2. A lubricating oil composition of claim 1, wherein said polyalkenyl moiety with a number average molecular weight of from about 1800 to about 3000.
3. A lubricating oil composition of claim 1, wherein the high molecular weight olefin copolymer comprises an ethylene-propylene copolymer grafted with maleic anhydride and derivatized with an aryl amine.
4. A lubricating oil composition of claim 2, wherein the total amount of diaryl amine moieties in the lubricating oil composition is from about 0.5 to 5 mmols/kg, and greater than about 50% of said diaryl amine moieties are derived from molecules having a number average molecular weight of greater than about 5000.
5. A lubricating oil composition of claim 1, further comprises from about 6 to about 50 mmols of phenate surfactant per kilogram of finished lubricating oil.

6. A lubricating oil composition of claim 5, wherein said dispersant comprises from about 1.3 to about 1.6 mono- or di-carboxylic acid producing moieties per polyalkenyl moiety, and has a boron content of less than about 20 ppm.
7. A lubricating oil composition of claim 1, having a sulfated ash content of less than about 0.5 wt. %.
8. A lubricating oil composition comprising a major amount of at least one of a Group I, Group II and/or Group III mineral oil of lubricating viscosity, or a mixture thereof; a minor amount of one or more high molecular weight polymers comprising olefin copolymers containing at least one moiety selected from alkyl amine, alkyl amide, aryl amine or aryl amide groups, nitrogen-containing heterocyclic groups or ester linkages; and a minor amount of dispersant comprising one or more nitrogen-containing dispersants that are the reaction product of a polyalkenyl-substituted mono- or dicarboxylic acid, anhydride or ester and a polyamine; at least one of the nitrogen-containing dispersants having a polyalkenyl moiety with a number average molecular weight of at least about 1800, and is derived from a polyalkene moiety having a molecular weight distribution (M_w/M_n) of from about 1.5 to about 2; said dispersant being essentially chlorine-free.
9. A lubricating oil composition of claim 8, wherein said polyalkenyl moiety with a number average molecular weight of from about 1800 to about 3000.
10. A lubricating oil composition of claim 8, wherein said dispersant contributes at least about 0.08 wt. % of nitrogen to the lubricating oil composition.
11. A lubricating oil composition of claim 8, wherein the high molecular weight olefin copolymer comprises an ethylene-propylene copolymer grafted with maleic anhydride and derivatized with an aryl amine.

12. A lubricating oil composition of claim 11, wherein the total amount of diaryl amine moieties in the lubricating oil composition is from about 0.5 to 5 mmols/kg, and greater than about 50% of said diaryl amine moieties are derived from molecules having a number average molecular weight of greater than about 5000.
13. A lubricating oil composition of claim 8, further comprises from about 6 to about 50 mmols of phenate surfactant per kilogram of finished lubricating oil.
14. A lubricating oil composition of claim 8, wherein said dispersant comprises from about 1.3 to about 1.6 mono- or di-carboxylic acid producing moieties per polyalkenyl moiety, and has a boron content of less than about 20 ppm.
15. A lubricating oil composition of claim 8, having a sulfated ash content of less than about 0.5 wt. %.
16. A lubricating oil composition of claim 8, having a sulfur content less than about 0.3 wt. %, a sulfated ash content of less than about 0.5 wt. %, and a chlorine content of less than about 50 ppm.
17. A lubricating oil composition of claim 8, wherein the functionalized, high molecular weight olefin molecule is derived from an amorphous ethylene-propylene copolymer, or a blend of an amorphous and a semi-crystalline ethylene-propylene copolymer with an SSI of from about 5 to about 30, produced by simultaneously shearing and functionalizing higher molecular weight ethylene-propylene copolymers, with maleic anhydride, in an extruder.
18. A lubricating oil composition of claim 17, wherein said semi-crystalline ethylene-propylene copolymer has a tapered structure and is produced in a tubular reactor.

19. A method of operating a diesel engine, which method comprises the step of lubricating said engine with a lubricating oil composition of claim 1.

20. The method of claim 19, wherein said diesel engine is provided with an exhaust gas recirculation system.

21. A method of operating a diesel engine, which method comprises the step of lubricating said engine with a lubricating oil composition of claim 8.

22. The method of claim 21, wherein said diesel engine is provided with an exhaust gas recirculation system.